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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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MMC2/0829

EXAMINER

QUARTERMAN, K

ART UNIT

PAPER NUMBER

2879

DATE MAILED:

08/29/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

**Office Action Summary**

Application No.

09/234,490

Applicant(s)

IRIE ET AL.

Examiner

Kevin Quarterman

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 23-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 and 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Drawings***

1. The amendments to specification resolves the drawing objections stated in the previous Office Action. The drawings are acceptable.

### ***Election/Restrictions***

2. Newly submitted claims 23-27 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The inventions are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the gas discharge display device can be used to produce a reddish display instead of displaying a whitish color.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art and has acquired different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for the product is not required for the method of using the product, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 23-27 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-9 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Regarding claim 1, the claim states "first, second and third fluorescent substances having...a common front side" beginning at the 3<sup>rd</sup> line of the claim. It is unclear as to what the common front side is or whether the fluorescent substances share a common front side.

10. Claim 1 also states "a filter disposed on the front side of the first to third fluorescent substances...to approximate to the whitish color the color to be displayed using the display device" beginning at the 9<sup>th</sup> line of the claim. The phrase "first to third" makes the claim unclear as to whether a filter is disposed on each of the fluorescent

substances individually or if one filter is disposed over the combination of the fluorescent substances. It also seems that something is missing between “the whitish color” and “the color to be displayed” in that same sentence. The sentence seems to be incomplete.

11. Regarding claims 2 and 9, both claims state “a light-emission intensity of the first display element is higher than a light-emission intensity of the first display element...” beginning at line 5 and line 1, respectively. It is unclear as to how the light-emission intensity of the first display element can be higher than itself.

12. Claim 2 also states “a structural condition of a first display element...is different from structural conditions of second and third display elements” beginning at line 2. The claim does not particularly point out what a “structural condition” is.

13. Claim 2 also states “...using the light emission of the first to third display elements” in the 9<sup>th</sup> line of the claim. The phrase “first to third” is makes the claim unclear as to whether the claim is referring to light emitted from each individual display element or from the combination of the display elements.

14. Regarding claim 3, the claim states that “the structural condition is an area of the electrodes” in the last line of the claim. The claim does not particularly point out what it is about the area of the electrodes that makes it a structural condition or what a “structural condition” is.

15. Regarding claim 4, the claim states “the area of the electrodes in the first display element is larger than an area of the electrodes in the first display element...” beginning

in the first line of the claim. It is unclear as to how the area of the electrodes in the first display element can be larger than itself.

16. Regarding claim 5, the claim states that “the structural condition of each display element is an area of a light-emission region of the fluorescent substance” beginning at line 4. The claim is unclear because it does not particularly point out what it is about the area of the light-emission region that makes it a structural condition or what a “structural condition” is.

17. Regarding claim 6, the claim states “the area...comprises a fluorescent substance layer in the first display element that is larger than an area of the light-emission region of the fluorescent substance layer in the first display element” beginning in the first line of the claim. It is unclear as to how the fluorescent layer in the first display element can be larger than itself.

18. Regarding claim 7, the claim states that “the structural condition is a thickness of the respective dielectric layers” in the last line of the claim. The claim does not particularly point out what it is about the thickness of the dielectric layers that makes it a structural condition or what a “structural condition” is.

19. Regarding claim 8, the claim states “the thickness of the dielectric substance layers in said first display element is less than a thickness of the dielectric substance layers in the first display element...” beginning in the first line of the claim. It is unclear to the Examiner as to how the thickness of the dielectric substance layers in the first display element can be thicker than itself.

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20. Regarding claim 28, the claim states "a light-emission intensity of at least one of the fluorescent substances...is set to be larger than the light-emission intensity of at least one of the said fluorescent substances at displaying an intended white light" in lines 8-11 of the claim. It is unclear as to which of the three fluorescent substances are being compared.

***Claim Rejections - 35 USC § 103***

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claims 1, 3, 5, 7, 11, 14-20, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueoka et al. (USPN 6034474) in view of Kirschner (USPN 4989953) and Vriens et al. (USPN 5813753).

23. Regarding claim 1, Figure 2 of Ueoka et al. shows a plasma display panel having first, second, and third fluorescent substances (8r, 8g, 8b). Figure 2 also shows filters (3r, 3g, 3b) disposed on the front side of the fluorescent substances.

24. Regarding claims 3 and 5, Figure 2 of Ueoka et al. also shows a pair of electrodes (2, 6) for generating an electric discharge.

25. Regarding claim 7, Figure 2 of Ueoka et al. also shows a dielectric layer (7) covering the electrodes.

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26. Ueoka et al. disclose the claimed invention except for the functional limitations that the fluorescent substances, in combination, emit a color other than a whitish color and the filter receives this non-whitish color and approximates to a whitish color.

27. Kirschner, in the analogous art of video displays, teaches that it is known that every visible color may be produced by combining lights emitted from phosphors of the primary colors (red, green, and blue) of the appropriate intensity (Column 6, Lines 39-44). Kirschner also discloses filters for attenuating emitted light coming from the phosphors.

28. Vriens et al., in the analogous art of light-emitting devices, teach that it is known in the art that filters can be used to convert light to a desired colored or to enhance the color purity of colored light emitted from phosphors of the three primary colors (Column 1, Lines 55-63 and Column 2, Lines 42-48).

29. Therefore, it would have been obvious to one having ordinary skill in the art to provide the display panel of Ueoka et al. with fluorescent substances as taught by Kirschner and filters as taught by Vriens et al. for displaying a whitish color.

30. Regarding claim 14, Ueoka et al. disclose the claimed invention except for the filter having a wavelength providing the lowest transmissivity of 560 to 610 nanometers. In regards to claim 15, Ueoka et al. also fails to exemplify the filter having absorption peaks appear in a wavelength region of 470 to 520 nanometers and in another region of 560 to 610 nanometers.

31. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a filter having the above stated characteristics, since it



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has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

32. Regarding claim 16, Figure 2 of Ueoka et al. shows a pair of substrates (1, 5) for forming a discharge space and the filter is formed directly on the inner surface of one of the substrates.

33. Regarding claim 17, Figure 2 of Ueoka et al. shows a discharge space (10) with the display elements.

34. Regarding claim 18, Ueoka et al. disclose that a protecting layer of MgO is formed to cover the dielectric layer for reducing the discharge voltage and preventing surface sputtering (Column 2, 1<sup>st</sup> Paragraph).

35. Regarding claims 19-20, Ueoka et al. disclose that the filter is made of a pigment particle (Column 1, Lines 48-50).

36. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueoka et al., Kirschner, and Vriens et al. as applied to claims 1-9 above, and further in view of Blaisdell et al. (USPN 4990821).

37. Ueoka et al., Kirschner, and Vriens et al. disclose the claimed invention except for the filter having a color function.

38. Blaisdell et al., in the analogous art of multicolor picture elements, teach that it is known in the art to provide filters for correcting the emitted colors to provide desired color output characteristics (Column 6, Last Paragraph).

39. Therefore, it would have been obvious to one having ordinary skill in the art to provide the display panel of Ueoka et al. with a filter having a color correction function, as taught by Blaisdell et al., for displaying a desired color.

40. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueoka et al., Kirschner, and Vriens et al. as applied to claims 1-9 above, and further in view of Wada et al. (USPN 4626071).

41. Ueoka et al., Kirschner, and Vriens et al. disclose the claimed invention except for the filter having a characteristic such that an average transmissivity of light in a green wavelength region is lower than that in a blue region and higher than that in a red region.

42. Figures 1-3 of Wada et al., in the analogous art of optical filters, teach that it is known in the art to provide a display device with filters having an average transmissivity of light in a green wavelength region being lower than that in a blue wavelength region and higher than that in a red wavelength region. Figures 1-3 also show that within a red wavelength region, the filter has a characteristic such that a transmissivity of a longer wavelength is higher than one of a shorter wavelength. Wada et al. disclose that the filter is used for increasing the contrast of the picture displayed on a display device (Abstract).

43. Therefore, it would have been obvious to one having ordinary skill in the art to provide the display panel of Ueoka et al. with a filter having the characteristics as taught by Wada et al. for improving the contrast of the displayed picture.

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44. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueoka et al., Kirschner, and Vriens et al. as applied to claims 1-9 above, and further in view of Asano et al. (USPN 6008582).

45. Ueoka et al., Kirschner, and Vriens et al. disclose the claimed invention but fails to exemplify the fluorescent substance for red is composed of (Y, Gd)  $\text{BO}_3$  : Eu; the fluorescent substance for green is composed of  $\text{Zn}_2\text{SiO}_4$  : Mn; and the fluorescent substance for blue is composed of  $\text{BaMgAl}_{10}\text{O}_{17}$ .

46. Asano et al., in the same art of display devices, teach that suitable phosphor substances for red, green, and blue are (Y, Gd)  $\text{BO}_3$  : Eu,  $\text{Zn}_2\text{SiO}_4$  : Mn, and  $\text{BaMgAl}_{10}\text{O}_{17}$ , respectively (Column 6, Lines 38-46). Asano uses these compositions for emitting light of desired color.

47. Therefore, it would have been obvious to a person having ordinary skill in the art to provide fluorescent substances for red, blue, and green with the compositions taught by Asano in the display device of Ueoka et al. for emitting multiple-colored light.

48. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueoka et al., Kirschner, and Vriens et al. as applied to claims 1-9 above, and further in view of Raber et al. (USPN 4803402).

49. Ueoka et al., Kirschner, and Vriens et al. disclose the claimed invention but fail to exemplify a discharge space filled with a Penning gas composed of neon and xenon.

50. Raber, in the same art of display devices, discloses a Penning mixture of neon doped with argon or xenon (Column 4, Lines 4-44). This Penning mixture is used for

emitting light of an electric field near the projected intersection of electrode wires  
(Column 3, Lines 33-41).

51. Therefore, it would have been obvious to a person having ordinary skill in the art to utilize the Penning mixture as taught by Raber in the gas discharge display device of Ueoka et al. for emitting light onto the display panel.

### ***Response to Arguments***

52. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

53. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Oida et al., USPN 6232717, disclose an AC type color plasma display panel. Ha et al., USPN 6252353, disclose a color plasma display panel. Ahearn et al., USPN 4147958, disclose a multicolor gas discharge memory panel. Singer et al., USPN 5813752, disclose an UV/Blue LED-phosphor device with short wave pass, long wave pass, band pass and peroit filters. Tsui et al., USPN 3892998, disclose a gas discharge device for multicolor information display. Wada et al., USPN 4692662, disclose a high contrast display device. Zieba et al., USPN 5811923, disclose a plasma display panel with infrared absorbing coating. Wada et al., USPN 4741962, disclose an optical filter made of inorganic material for blue light. Funada, USPN 5838106, discloses a plasma display panel with color filter. Tanabe et al., JP 2000323041, disclose a discharge tube for display.

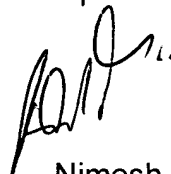
**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (703) 308-6546. The examiner can normally be reached on M-F (8-4:30).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703) 305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Kevin Quarterman  
Examiner  
Art Unit 2879



Nimesh Patel  
Supervisory Patent Examiner  
Art Unit 2879

kq   
August 23, 2001